sequence.

sequence is an FRI orthologue obtainable from a plant species other than Arabidopsis thaliana.

9. A nucleic acid as claimed in claim 5 wherein the variant sequence is a derivative of the FRI nucleotide sequence selected from the group consisting of any of:

- (i) the sequence of Fig 4;
- (ii) the sequence of Fig 5;
- (iii) bases 362-2188 inclusive of Fig 5; or is degeneratively equivalent to any of these. by way of one or more of addition, insertion, deletion or substitution of the FRI nucleotide sequence by way of one or more of addition, insertion, deletion, or substitution of the FRI nucleotide
- 10. An isolated nucleic acid which comprises a sequence which the complement of the FRI or variant nucleotide sequence of claim 1.
- 12. A process for producing a nucleic acid as claimed in claim 9 which process comprises the step of modifying a FRI nucleotide sequence selected from the group consisting of any of:
- (i) the sequence of Fig 4;
- (ii) the sequence of Fig 5;
- (iii) bases 362-2188 inclusive of Fig 5; or is degeneratively equivalent to any of these by way of one or more of addition, insertion, deletion or substitution of the FRI nucleotide sequence.
- 13. A method for identifying or cloning a nucleic acid obtainable from the FRI locus of a plant, which nucleic acid encodes a polypeptide which is capable of specifically altering the flowering time of a plant into which the nucleic acid is introduced, which method employs a probe or primer of



A method for determining the presence of a nucleic acid 14. A method for determining the presence of a nucleic acid of a plant, which nucleic acid acid obtainable from the FRI locus of a plant, canable of specifically obtainable annimential which is canable of specifically obtainable annimential which is encodes a polypeptide which time of a plant into which the flowering time of a plant content of altering altering introduction the flowering time of a plant content of altering introduction the grant of altering introduction t opcarnable polypeptide which is capable of specifically encodes a polypeptide which is capable of specifically altering the flowering time of a plant into which the applant, acid is introduced within a probe or primer of claim in acid is method employed. claim 11. acta 18 Incroduced when the or primer of claim 1/2.

which method employs a probe or primer of which method employs a probe or primer of claim 1/2. A method as claimed in claim 14, which method comprises the steps or:

(a) providing a preparation of nucleic acid from a plant cell;

(b) providing a preparation of nucleic acid from a plant cell;

(c) providing a preparation of nucleic acid from a plant cell;

(d) providing a preparation of nucleic acid from a plant cell; (a) providing a nucleic acid molecule which is a probe of at least a nucleic acid molecule which is a probe of at least a nucleic acid molecule which is a probe of at least a nucleic acid molecule which is a probe of at least a nucleic acid molecule which is a probe of at least a nucleic acid molecule which is a probe of at least a nucleic acid molecule which is a probe of at least a nucleic acid molecule which is a probe of at least a nucleic acid molecule which is a probe of at least a nucleic acid molecule which is a probe of at least a nucleic acid molecule which is a probe of at least a nucleic acid molecule which is a probe of at least a nucleic acid molecule which is a probe of at least a nucleic acid molecule which is a probe of at least a nucleic acid molecule which is a probe of at least a nucleic acid molecule which is a probe of at least a nucleic acid molecule which is a nucleic acid molecule which (D) providing a nucleic acid having a sequence of ar least in primer, said nucleic in least which semicine is a proper of at least in least in least in least in least which semicines is a proper of at least about which semicines is a proper of at least about the primer, said nucleic acid having a sequence of at least in least in least in least about the primer, said nucleic acid having a sequence of at least about the primer, said nucleic acid having a sequence of at least about the primer, said nucleic acid having a sequence of at least about the primer, said nucleic acid having a sequence of at least about the primer, said nucleic acid having a sequence of at least about the primer. primer, salu mucrerc aciu naviny a sequence is present in which sequence is present in the real acid naving a sequence is present in the real acid naving a sequence is present in the real acid naving a sequence or a complement the real acid naving a sequence is present in the real acid naving a sequence or a complement the real acid naving a sequence or a complement the real acid naving a sequence or a complement the real acid naving a sequence is present in the real acid naving a sequence is present in the real acid naving a sequence is present in the real acid naving a sequence is present in the real acid naving a sequence is present in the real acid naving a sequence is present in the real acid naving a sequence is present in the real acid naving a sequence is present in the real acid naving a sequence is present in the real acid naving a sequence is present in the real acid naving a sequence of acid naving a sequence is a complete the real acid naving a sequence of acid naving a sequence The the FRI nucleotide sequence or a complement thereof and either the grown consisting of any of. the steps of: 15. selected from the group consisting of any of: or these, with said or these, with said preparation which is acid in said preparation with said preparation wi or is degeneratively equivalent to any of these (c) contacting nucleic acid in sala preparation with sala and, in nucleic acid molecule under conditions for hybridisation, in nucleic acid molecule under aria variant if are contacting nucleic acid molecule under (a) identifying a nucleic acid molecul hases 362-2188 inclusive of Fig 5; (i) the sequence of Fig 4; (ii) the sequence of Fig 5; dentifying a nucleic acid variant if present by its 16. A method as claimed in claim 14, which method comprises nybridisation with said nucleic acid molecule. the steps of a preparation of nucleic acid from a plant cell;

(a) providing a preparation of nucleic acid from a plant or make acid from a plant or make acid from a plant cell;

(b) providing a preparation of nucleic acid from a plant cell;

(a) providing a preparation of nucleic acid from a plant cell;

(b) providing a preparation of nucleic acid from a plant cell; (a) providing a pair of nucleic acid molecule primer eaid

(b) providing a pair of eaid nrimere heirs arimer for pre at least one of eaid nrimere. (D) providing a pair or nucleic acid molecule primer; said

for PCR, at least commons of at least common of at least commons of at least common of at leas TOY puring a sequence of at least about they the primer having a sequence is necessary in either the primer having a sequence is necessary in either the primer having a sequence is necessary in either the primer having a sequence is necessary in either the primer having a sequence is necessary in either the primer having a sequence is necessary in either the primer having a primer having a primer is necessary to be a primer to be a prime primer naving a sequence of a complement the roof and colored in length, which sequence or a complement thereof and colored in length, which sequence or a complement thereof and colored in length, which sequence or a complement thereof and colored in length, which sequence or a complement thereof and colored in length, which sequence or a complement thereof and colored in length, which sequence or a complement thereof and colored in length, which sequence or a complement thereof and colored in length, which sequence or a complement the result in length, which sequence or a complement the result in length, which sequence or a complement the result in length, which sequence or a complement the result in length, which sequence or a complement the result in length, which sequence or a complement the result in length, which sequence or a complement the result in length, which sequence or a complement the result in length, which sequence or a complement the result in length, which sequence or a complement the result in length, which sequence or a complement the result in length, which sequence or a complement the result in length, which sequence or a complement the result in length, which sequence or a complement the result in length, which sequence or a complement the result in length, which is a complement to the result in length. The grown consisting of any of. the steps of: the group donsisting of any of:

- (i) the sequence of Fig 4;/
- (ii) the sequence of Fig/5;
- (iii) bases 362-2188 inclusive of Fig 5;
- or is degeneratively/equivalent to any of these
- (c) contacting nucleic acid in said preparation with said primers under conditions for performance of PCR,
- (d) performing PCR and determining the presence or absence of an amplified PCR product.
- 18. A recombinant vector which comprises the nucleic acid of claim 1.
- 19. A vector as claimed in claim 18 wherein the nucleic acid comprised in the vector is further capable of modulating VRN2 and/or FLC expression in a plant in which the nucleic acid is transcribed.
- 20. A vector as claimed in claim 18 wherein the nucleic acid is operably linked to a promoter for transcription in a host cell, wherein the promoter is optionally an inducible promoter.
- 21. A vector as claimed in claim 18 which is a plant vector.
- 22. A method which comprises the step of introducing the vector of claim 18 into a host cell, and optionally causing or allowing recombination between the vector and the host cell genome such as to transform the host cell.
- 23. A host/cell containing or transformed with a heterologous nucleic acid of claim 1.
- 26. A transgenic plant which is obtainable by the method of claim 25, or which is a clone, or selfed or hybrid progeny or other descendant of said transgenic plant,

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which in each case includes the plant cell containing or transformed with a heterologous nucleic acid obtainable from the FRI locus of a plant, which nucleic acid encodes a polypeptide which is capable of specifically altering the flowering time of a plant into which the nucleic acid is introduced.

- 27. A plant as claimed in claim 26 which is selected from the group consisting of: sugar beet; a Brassica such as cauliflower, broccoli, cabbage, spinach, curly kale, *B. Napus;* potato; lettuce; a culinary herb.
- 28. A part of propagule from a plant as claimed in claim 26.
- 29. An isolated polypeptide which is encoded by the FRI nucleotide sequence of claim 1.



31. A polypeptide as claimed in claim 29 which is a fragment of the polypeptide in Figure 6.



32. A method of making the polypeptide of claim 29, which method comprises the step of causing or allowing expression from a nucleic acid obtainable from the FRI locus of a plant, which nucleic acid encodes a polypeptide which is capable of specifically altering the flowering time of a plant into which the nucleic acid is introduced in a suitable host cell.



- 34. A polypeptide which comprises the antigen-binding site of the antibody of claim 33.
- 35. A method for influencing or affecting flowering time in a plant, which method comprises the step of causing or allowing expression of a nucleic acid obtainable from the FRI locus of a plant, which nucleic acid encodes a polypeptide which is capable of specifically altering the flowering time of a plant

into which the nucleic acid is introduced within the cells of the plant, following an earlier step of introducing the nucleic acid into a cell of the plant or an ancestor thereof.

36. A method as claimed in claim 35 for delaying flowering time in a plant, wherein the nucleic acid which comprises an FRI nucleotide sequence which encodes the polypeptide of Fig. 6.

- 37. A method as claimed in claim 35 for accelerating flowering time in a plant, which method comprises any of the following steps of:
- (i) causing or allowing transcription from a nucleic acid obtainable from the FRI locus of a plant, which nucleic acid encodes a polypertide which is capable of specifically altering the flowering time of a plant into which the nucleic acid is introduced in the plant such as to reduce FRI expression by an antisense mechanism;
- (ii) causing or allowing transcription from a nucleic acid which is capable of delaying the flowering time and thereby extending a vegetative phase in the plant or a part thereof such as to reduce FRI expression by co-suppression; (iii) use of nucleic acid encoding a ribozyme specific for a nucleic acid obtainable from the FRI locus of a plant, which nucleic acid encodes a polypeptide which is capable of specifically altering the flowering time of a plant into which the nucleic acid is introduced.

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39. A method as claimed in claim 35 which further comprises use of a nucleic acid capable of modulating VRN2 expression or FLC expression.